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Apple Diseases: An Aid to Identification and Control

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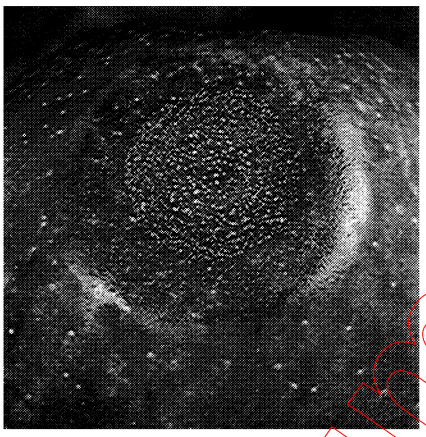
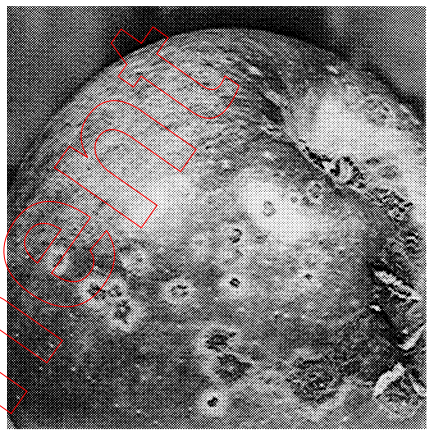
APPLE DISEASES

An Aid to Identification and Control

1. BLACK ROT ON FRUIT

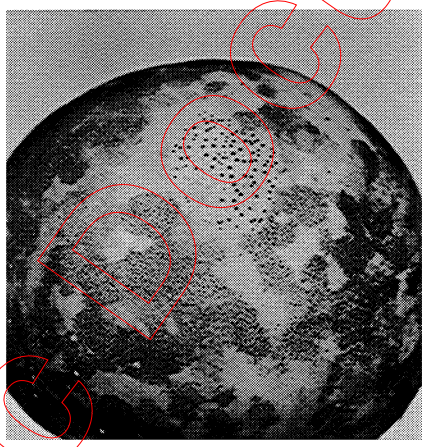


2. BITTER ROT ON FRUIT



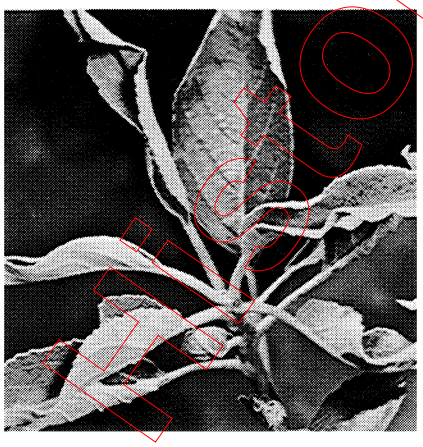
3. SCAB ON FRUIT

4. BLACK ROT ON MUMMY AND FROG-EYE STAGE ON LEAF

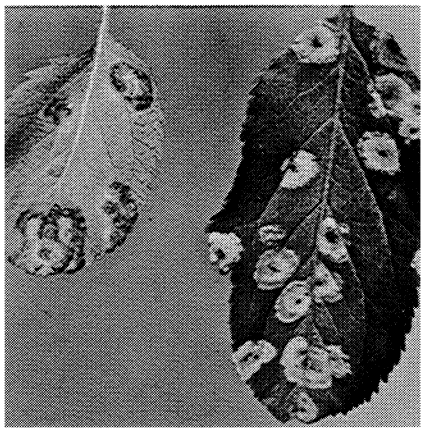


5. SOOTY BLOTCH AND FLYSPECK DAMAGE TO FRUIT

6. SCAB ON FRUIT AND LEAF



7. POWDERY MILDEW



8. CEDAR-APPLE RUST

9. FIRE BLIGHT

PREPARED BY THE CLEMSON UNIVERSITY COOPERATIVE EXTENSION SERVICE'S ENTOMOLOGY - PLANT PATHOLOGY AND AGRICULTURAL COMMUNICATIONS SECTIONS, FEDERAL EXTENSION SERVICE COOPERATING

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An Aid to Identification

1 and 4. BLACK ROT, caused by the fungus *Physalospora obtusa,* produces symptoms on fruit, leaves and limbs. On fruit a light brown, firm-textured rot appears on the open calyx end of fruit or around a mechanical injury. As rot ages, concentric dark bands appear and pycnidia (fruiting bodies of the fungus) occur in these areas. Frogeye leafspot on foliage is also caused by this disease. Twig or limb cankers occurring as small, slightly sunken, reddish-brown areas may be present. Typical, shrivelled, black mummies result from fruit infection.

2. BITTER ROT, caused by the fungus *Glomerella cingulata* occurs on apples, pears, peaches, grapes and blueberries. A firm rot starting as a small circular light brown area, it enlarges rapidly with a distinctive saucer-shaped depression. In late stages concentric rings may develop on the periphery of the rot area. Gelatinous, salmon-pink masses of spores are produced from fruiting bodies (acervuli) in area of concentric rings.

3 and 6. SCAB ON FRUIT is caused by the fungus *Venturia inaequalis.* Primary scab lesions on fruit appear as light brown or olive green spots on young fruits, leaves and leaf petioles. Scab infected leaves turn yellow and fall. Scab lesions on fruit become corky, split and result in knotty misshapen fruit. Secondary infections on fruit occur as scattered dark brown to black scabby areas on fruit surface.

5. SOOTY BLOTCH AND FLYSPECK. Once believed to be caused by the same fungus, Sooty blotch is caused by *Gloeodes pomigena;* Flyspeck is caused by *Microthyriella rubi.* Sooty blotch is also known as "sooty smudge." Hundreds of dark, minute pycnidia give infected fruit a "smudged" appearance which can be removed by vigorous rubbing. Flyspeck consists of circular, black, frequently glistening spots usually arranged in groups of 10-50 specks. They closely resemble true flyspecks but are the ascocarps (fruiting bodies) of the casual fungus.

7. POWDERY MILDEW occurs on buds, blossoms, leaves, twigs and fruits as a light gray coating of mildew. Infected leaves become crinkled, curled and stunted. Infected twigs are stunted and shortened with lateral buds bunched together resulting in a "witches broom" type of growth when buds develop.

8. CEDAR APPLE RUST, one of the easiest apple diseases to identify, is caused by the fungus *Gymnosporangium juniperi-virginianae.* Leaf infections appear in May or early June as small, striking yellow spots on the upper leaf surface. As many as 100 spots may occur on a single leaf. As these spots enlarge, an orange exudate is produced and a little later black dots or fruiting bodies (Pycnia) develop.

9. FIREBLIGHT is a destructive bacterial disease caused by *Erwinia amylovora.* Blossoms, twigs, leaves and fruit may be infected. Infected blossoms suddenly turn brown, wilt and die. Young succulent terminals suddenly wilt, turn black and have a tendency to curve over forming "a shepherd's crook." Newly infected terminals have water-soaked, dark green somewhat oily inner tissue.

Prepared by Eric G. Sharvelle and Donald H. Scott, plant pathologists.

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